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INTELLECTUAL PROPERTY  
PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 200400670-1

Inventor(s): David C. Collins

Confirmation No.: Unkn.

Application No.: 10/820,952

Examiner: Unknown

Filing Date: April 8, 2004

Group Art Unit: Unkn.

**Title: GENERATING AND DISPLAYING SPATIALLY OFFSET SUB-FRAMES**

Mail Stop Amendment  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL LETTER FOR RESPONSE/AMENDMENT**

Transmitted herewith is/are the following in the above-identified application:

- Response/Amendment
- New fee as calculated below
- No additional fee
- Other SIDS; Supp 1449

- Petition to extend time to respond
- Supplemental Declaration

Fee\$ \_\_\_\_\_

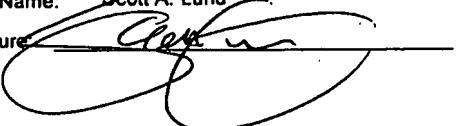
CLAIMS AS AMENDED BY OTHER THAN A SMALL ENTITY						
(1) FOR	(2) CLAIMS REMAINING AFTER AMENDMENT	(3) NUMBER EXTRA	(4) HIGHEST NUMBER PREVIOUSLY PAID FOR	(5) PRESENT EXTRA	(6) RATE	(7) ADDITIONAL FEES
TOTAL CLAIMS		MINUS		= 0	X \$50	\$ 0
INDEP. CLAIMS		MINUS		= 0	X \$200	\$ 0
<input type="checkbox"/> FIRST PRESENTATION OF A MULTIPLE DEPENDENT CLAIM					+ \$360	\$ 0
EXTENSION FEE	<input type="checkbox"/> 1st Month \$120	<input type="checkbox"/> 2nd Month \$450	<input type="checkbox"/> 3rd Month \$1020	<input type="checkbox"/> 4th Month \$1590		\$ 0
					OTHER FEES	\$
					TOTAL ADDITIONAL FEE FOR THIS AMENDMENT	\$ 0

Charge \$ 0 to Deposit Account 08-2025. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.

Date of Deposit: November 29, 2005

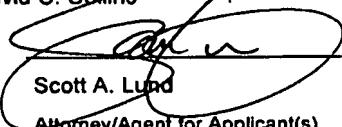
Typed Name: Scott A. Lund

Signature: 

Respectfully submitted,

David C. Collins

By

  
Scott A. Lund

Attorney/Agent for Applicant(s)

Reg No. : 41,166

Date : November 29, 2005

Telephone : (612) 573-2006



Hewlett-Packard Company  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 200400670-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): David C. Collins  
Application No.: 10/820,952  
Filing Date: April 8, 2004

Confirmation No.: Unkn.  
Examiner: Unknown  
Group Art Unit: Unkn.

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Mail Stop Amendment  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

This Information Disclosure Statement is submitted:

- under 37 CFR 1.97 (b), or  
(Within three months of filing national application; or date of entry of national application; or before mailing date of first action on the merits; whichever occurs last)
- under 37 CFR 1.97 (c), together with either a:  
 Statement under 37 CFR 1.97 (e), or  
 a \$180 fee under 37 CFR 1.17 (p), or  
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- under 37 CFR 1.97 (d), together with either a:  
 Statement under 37 CFR 1.97 (e)(1) or (2), and  
 a \$180 fee set forth in 37 CFR 1.17 (p)  
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Applicant(s) submit herewith form PTO 1449 - Information Disclosure Statement together with any required copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

- A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an english language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed.

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OR

I hereby certify that this paper is being transmitted to the Patent and Trademark Office facsimile number (571) 273-8300

Date of facsimile:

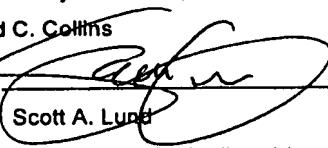
Typed Name: Scott A. Lund

Signature:

Respectfully submitted,

David C. Collins

By

  
Scott A. Lund

Attorney/Agent for Applicant(s)

Reg No. : 41,166

Date : November 29, 2005

Telephone : (612) 573-2006



DEC 01 2005

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**U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE**  
A collection of information unless it contains a valid OMB control number.

**Substitute for form 1449/PTO**

## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

*(Use as many sheets as necessary)*

Substitute for form 1449/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		Application Number	10/820,952
		Filing Date	April 8, 2004
		First Named Inventor	David C. Collins
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet	1	of	1
		Attorney Docket Number	200400670-1

Sheet 1

1

Attorney Docket Number 200400670-1

**U. S. PATENT DOCUMENTS**

**Examiner  
Initials\***

/Jeffrey Smith/

Date Considered

08/03/2007

**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. **1**Applicant's unique citation designation number (optional). **2**See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. **3**Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). **4**For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. **5**Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. **6**Applicant is to place a check mark here if English language Translation is attached.

Translation is attached.  
This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**HEWLETT-PACKARD COMPANY**  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, Colorado 80527-2400

## **PATENT APPLICATION**

**ATTORNEY DOCKET NO.** 200400670-1

1830

**IN THE**  
**UNITED STATES PATENT AND TRADEMARK OFFICE**

**Inventor(s):** David C. Collins  
**Application No.:** 10/820,952

**Confirmation No.:**

**Filing Date:** April 8, 2004

**Examiner:** Unknown

**Filing Date:** April 8, 2004 **Group Art Unit:** Unkn.

**Title:** GENERATING

**Group Art Unit:** Unkn.

## **GENERATING AND DISPLAYING SPATIALLY OFFSET SUB-FRAMES**

**Mail Stop  
Commissioner for Patents  
PO Box 1450  
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CLAIMS AS AMENDED BY OTHER THAN A SMALL ENTITY						
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TOTAL CLAIMS		MINUS		= 0	X \$18	\$ 0
INDEP. CLAIMS		MINUS		= 0	X \$88	\$ 0
[ ] FIRST PRESENTATION OF A MULTIPLE DEPENDENT CLAIM					+ \$300	\$ 0
EXTENSION FEE	1ST MONTH \$110.00	2ND MONTH \$430.00	3RD MONTH \$980.00	4TH MONTH \$1530.00		\$ 0
OTHER FEES					\$	
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT						\$ 0

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Respectfully submitted,

David C. Collins

*[Signature]*

Attorney/Agent for Applicant(s)

Date of Deposit: Dec. 20, 2004

Typed Name: Scott A. Lund

Signature

Rev 10/04 (TransAmd)

- Attach as First Page to Transmitted Papers -

**Telephone No.: (612) 573-2006**

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P. O. Box 272400  
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 200400670-1

O I P E J C  
DEC 27 2004  
PATENT & TRADEMARK OFFICE  
**IN THE**  
**UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor(s): David C. Collins  
Application No.: 10/820,952

Confirmation No.:

Filing Date: April 8, 2004  
Title: GENERATING AND DISPLAYING SPATIALLY OFFSET SUB-FRAMES

Examiner: Unknown

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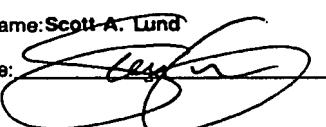
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OR

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Typed Name: Scott A. Lund

Signature: 

Respectfully submitted,

David C. Collins,

By 

Scott A. Lund

Attorney/Agent for Applicant(s)

Reg. No. 41,166

Date: Dec. 20, 2004

Telephone No.: (612) 573-2006



PTO/SB/08A (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

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Shee

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**Complete if Known**

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Filing Date	April 8, 2004
First Named Inventor	David Collins
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket Number	200400670-1

U. S. PATENT DOCUMENTS

## **FOREIGN PATENT DOCUMENTS**

Examiner Signature	/Jeffrey Smith/	Date Considered	08/03/2007
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PATENT APPLICATION

ATTORNEY DOCKET NO. 200400670-1

IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): David C. Collins

Confirmation No.:

Application No.:

Examiner:

Filing Date: herewith

Group Art Unit:

Title: GENERATING AND DISPLAYING SPATIALLY OFFSET SUB-FRAMES

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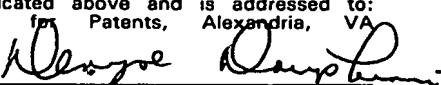
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Respectfully submitted,

Date of Deposit Apr. 8, 2004

David C. Collins

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.

By 

Christopher P. Kosh

Attorney/Agent for Applicant(s)  
Reg. No. 42,760

Typed Name: Denyse Dauphinais

Date: Apr. 8, 2004

## PATENT APPLICATION

Sheet 1 of 3

FORM PTO-1449		ATTY. DOCKET NO. <b>200400670-1</b>	APPLICATION NO.	CONFIRMATION NO.
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		APPLICANT <b>David C. Collins</b>		
(Use several sheets if necessary)		FILING DATE <b>Herewith</b>	GROUP	

## REFERENCE DESIGNATION      U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
/JSS/	1A 4,373,784	Feb. 1983	Nonomura et al.	
	1B 4,662,746	May 5, 1987	Hornbeck	
	1C 4,811,003	Mar. 1989	Strathman et al.	
	1D 4,956,619	Sep. 11, 1990	Hornbeck	
	1E 5,061,049	Oct. 29, 1991	Hornbeck	
	1F 5,083,857	Jan. 28, 1992	Hornbeck	
	1G 5,146,356	Sep. 1992	Carlson	
	1H 5,317,409	May 1994	Macocs	
	1I 5,490,009	Feb. 6, 1996	Venkateswar et al.	
↓	1J 5,557,353	Sep. 1996	Stahl	
	1K 5,689,283	Nov. 18, 1997	Shirochi	

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	PUBLICATION DATE	NAME OF PATENTEE OR APPLICANT	Pages/Columns/Lines Where Relevant Passages/Figures Appear	Check if Translation attached
	1L EP 1001306A2	May 17, 2000	Olympus Optical Co.,		X
	1M				
	1N				
	1O				
	1P				

## OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

/JSS/	1Q	L.M. Chen and S. Hasagawa, "Visual Resolution Limits for Color Matrix Displays", "One Panel Projectors" Displays, Technologies, and Applications, Vol. 13, pp. 221-226, 1992.
/JSS/	1R	A. Yasuda et al., "FLC Wobbling for High-Resolution Projectors", Journal of the SID 5/3 1997, pp. 299-305.
/JSS/	1S	T. Tokita et al., "P-108: FLC Resolution-Enhancing Device for Projection Displays", SID 02 Digest 2002, pp. 638-641.

EXAMINER	/Jeffrey Smith/	DATE CONSIDERED
		08/03/2007

## PATENT APPLICATION

Sheet 2 of 3

FORM PTO-1449		ATTY. DOCKET NO.	APPLICATION NO.	CONFIRMATION NO.
		200400670-1		
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT		APPLICANT		
(Use several sheets if necessary)		David C. Collins		
		FILING DATE	GROUP	
		Herewith		

## REFERENCE DESIGNATION                    U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
/JSS/	2A	5,912,773	Jun. 1999	Barnett et al.	
	2B	5,920,365	Jul. 1999	Eriksson	
	2C	5,953,148	Sep. 1999	Moseley et al.	
	2D	5,978,518	Nov. 2, 1999	Oliyide et al.	
	2E	6,025,951	Feb. 15, 2000	Swart et al.	
	2F	6,067,143	May 2000	Tomita	
	2G	6,104,375	Aug. 15, 2000	Lam	
	2H	6,118,584	Sep. 2000	Van Berkel et al.	
	2I	6,141,039	Oct. 31, 2000	Poetsch	
↓	2J	6,184,969	Feb. 6, 2001	Ferguson	
	2K	6,219,017	Apr. 17, 2001	Shimada et al.	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBLICATION DATE	NAME OF PATENTEE OR APPLICANT	Pages/Columns/Lines Where Relevant Passages/Figures Appear	Check If Translation attached
	2L					
	2M					
	2N					
	2O					
	2P					

## OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

/JSS/	2Q	D.H. Kelly, "Motion and Vision - II. Stabilized Spatio-Temporal Threshold Surface," Journal of the Optical Society of America, Vol. 69, No. 10, October 1979.
/JSS/	2R	Candice H. Brown Elliot et al., "Color Subpixel Rendering Projectors and Flat Panel Displays"; SMPTE Advanced Motion Imaging Conference; February 27-March 1, 2003; pgs. 1-4.
/JSS/	2S	Diana C. Chen, "Display Resolution Enhancement with Optical Scanners" Applied Optics, Vol. 40, No. 5, February 10, 2001, pp. 636-643.

EXAMINER	DATE CONSIDERED
/Jeffrey Smith/	08/03/2007

## PATENT APPLICATION

Sheet 3 of 3

FORM PTO-1449

LIST OF PATENTS AND PUBLICATIONS FOR  
APPLICANT'S INFORMATION DISCLOSURE  
STATEMENT

(Use several sheets if necessary)

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200400670-1		
APPLICANT		
David C. Collins		
FILING DATE	GROUP	
Herewith		

## REFERENCE DESIGNATION                    U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	PUBLICATION DATE	NAME	Pages, Columns, Lines Where Relevant Passages or Figures Appear
/JSS/	3A	6,239,783	May 29, 2001	Hill et al.	
	3B	6,243,055	Jun. 5, 2001	Ferguson	
	3C	6,313,888	Nov. 6, 2001	Tabata	
	3D	6,384,816	May, 6, 2002	Tabata	
	3E	6,393,145	May 21, 2002	Betrisey et al.	
	3F	6,522,356	Feb. 2003	Watanabe	
	3G	2003/0020809	Jan. 30, 2003	Gibbon et al.	
↓	3H	2003/0076325	Apr. 2003	Thrasher	
	3I	2003/0090597	May 15, 2003	Katoh et al.	
	3J				
	3K				

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	3L					
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	3P					

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	3Q	
	3R	
	3S	

EXAMINER

/Jeffrey Smith/

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IPW

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
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PATENT APPLICATION

ATTORNEY DOCKET NO. 200400670-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): David C Collins

Confirmation No.: 9712

Application No.: 10/820952

Examiner:

Filing Date: Apr 08, 2004

Group Art Unit:

Title: Generating And Displaying Spatially Offset Sub-Frames

Mail Stop Amendment  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

This Information Disclosure Statement is submitted:

- under 37 CFR 1.97 (b), or  
(Within three months of filing national application; or date of entry of national application; or before mailing date of first action on the merits; whichever occurs last)
- under 37 CFR 1.97 (c), together with either a:  
 Statement under 37 CFR 1.97 (e), or  
 a \$180 fee under 37 CFR 1.17 (p), or  
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- under 37 CFR 1.97 (d), together with either a:  
 Statement under 37 CFR 1.97 (e)(1) or (2), and  
 a \$180 fee set forth in 37 CFR 1.17 (p)  
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Please charge to Deposit Account 08-2025 the sum of \$ 0.00. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25.

Applicant(s) submit herewith form PTO 1449 - Information Disclosure Statement together with any required copies of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

- A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an english language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed.

It is requested that the information disclosed herein be made of record in this application.

- I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450

Date of Deposit: 1/17/04  
OR

Respectfully submitted,

David C Collins

By



Timothy F. Myers

Attorney/Agent for Applicant(s)

Reg No. : 42,919

Date : 1/17/04

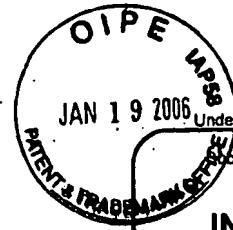
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*(Use as many sheets as necessary)*

Sheet 1 of 2

Substitute for form 1449/PTO		<b>Complete If Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(Use as many sheets as necessary)</i>		Application Number	10/820952
		Filing Date	Apr 08, 2004
		First Named Inventor	Collins
		Art Unit	Unknown
		Examiner Name	Unknown
Sheet	1	of	2
		Attorney Docket Number	

**U. S. PATENT DOCUMENTS**

## **FOREIGN PATENT DOCUMENTS**

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear
		Country Code <sup>2</sup> -Number <sup>3</sup> -Kind Code <sup>4</sup> (# known)			
/JSS/		EP 1 503 335 A	02-02-2005	HP	
		EP 1 388 838 A	02-11-2004	HP	
↓		EP 1 388 839 A	02-11-2004	HP	
		WO 02/03688A	01-10-2002	Imax	

Examiner Signature	/Jeffrey Smith/	Date Considered	08/03/2007
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*Complete if Known***INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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Sheet

2

of

2

Application Number 10/820952

Filing Date Apr 08, 2004

First Named Inventor Collins

Art Unit Unknown

Examiner Name Unknown

Attorney Docket Number 200400670-1

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
/JSS/		Jaynes et al, "Super-Resolution Composition in Multi-Projector Display", IEEE Intl Workshop, Oct 12, 2003	
/JSS/		Irani et al, "Improving Resolution by Image Registration", Graphical Models and Image Processing, May 1991, No. 3	

Examiner Signature	/Jeffrey Smith/	Date Considered	08/03/2007
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